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VOLUME XLVII SEPTEMBER, 1948 NUMBER 6

DIVIDED INDIA

JOHN E. BRUSH
University of Wisconsin

The partition of India on the eve of Britain's relinquishment of control over its destiny resulted from a socio-religious conflict which threatens to lead to open warfare. The roots of the Hindu-Muslim clash go back ten centuries, but the present extreme manifestations of intolerance are of recent origin. Few people took seriously the proposal for separation of the Muslim areas as late as 1940. Yet it became apparent with the final achievement of Dominion Status that the political unity of the subcontinent which had been under British hegemony for a century could not be maintained. Trade and cultural ties were not strong enough to hold together the 389 millions of people who had come to be known to the world as Indians.

RELIGIOUS COMMUNITIES

Religion determines many of the social relationships of individuals and influences diet, dress and even the means of livelihood. Undoubtedly the differences between the religious communities have been exaggerated by alien rulers and by native leaders. The underlying cleavages are real, however, and fusion is incomplete tho adherents of various faiths are mingled. Thus, the geographical community is segmented by the religious community. The term, community, denotes common beliefs and practices, but also awareness of similar economic and political interests. It is not a grouping based on language or race.

Some of the Muslim leaders feared that their community would be dominated by Hindus in the All-India Federation which is to be governed according to a democratic constitution. It is true that the Hindu community, including all castes, made up 66 per cent of the population in 1941, while Mohammedans numbered 94 millions

or 24 per cent of the total. But there are several smaller groups which do not share the Muslims' fear. Chief among them are Sikhs and Christians—about six million (1½ per cent) each.

The Muslims came to feel that they represented a distinct nationality and, as such, demanded a government and territory of their own, proposing that the state be known as Pakistan. Recognition of the demand for separation of the areas where they formed more than half of the population failed to solve the minority problem because of the wide intermingling of communities. Pakistan may be said to exist in every town and village where Muslims live who believe that their welfare depends upon the existence of the new state. The problem may be solved only by change of creed or by change of abode. Conversion is acceptable to few and we are witnessing migrations on a huge scale.

DISTRIBUTION OF COMMUNITIES

In considering the boundary question we need only to deal with Hindus and Muslims, and one small group—the Sikhs, who assumed an important role because of their solidarity and concentration in a single critical area. The map of percentage distribution in 1941 (Fig. 1) represents the composition of population just before the partition.

Hindus predominated in the closely-settled parts of peninsular India and in the middle and upper Ganges valley. They formed a quarter to a tenth of the population of the Punjab and the lower Indus valley, but much less than a tenth along the north-west frontier. In the Ganges delta the proportion of Hindus varied from more than three-fourths on the western margin to less than one-fourth on the eastern margin, tho in parts of the Brahmaputra valley farther east they formed more than half the population.

The highest proportion of Muslims was found in the north-west—a region subjected to repeated influxes of Mohammedan Turks, Iranians, and Afghans. Other religions were early eliminated in the mountainous borderlands, but the penetration of Islam was more significant on the Indo-Gangetic plains because the seat of Muslim power was established here and because larger numbers were won by intermarriage and mass conversion. As far east as Delhi they made up a quarter of the population and in the middle Ganges, 10 to 15 per cent. The success of the faith was astonishing in Bengal where, in the eastern part of the delta, was

found the greatest density of Indian Muslims, constituting more than three-fourths of the inhabitants. In central India Muslims established themselves as overlords but gained only a small fraction of adherents. The interior population was ten per cent Muslim

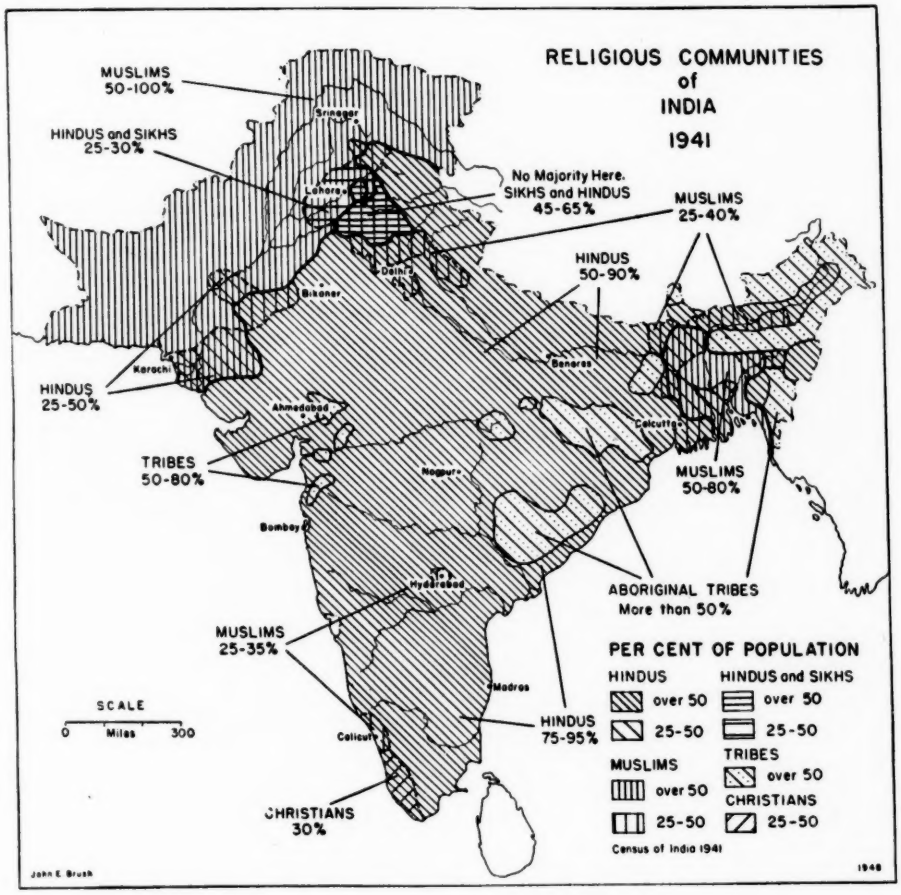

Fig. 1. The percentage distribution of communities has been altered by the transfer of Hindu and Sikh minorities from the north-west Muslim zone and the emigration of Muslims from the area between Lahore and Delhi.

but along the eastern coast their proportion was generally less than five per cent. The large west coast minority is descended from a medieval Arab trading outpost.

If the areas where either Hindus or Muslims had a majority in 1941 are delimited (heavy lines on Fig. 1) the boundaries are

found to coincide nearly everywhere—as in Bengal and Assam, and in the Thar desert and the Himalaya mountains—but in the fertile plains between Lahore and Delhi an area appears where no group held a majority. Precisely this area is the homeland of the Sikhs—a militant Hindu reform sect. Here they were most numerous altho they did not form even half of the population. The Sikhs were invited to join Pakistan but they chose to federate with India.

Division of Communities

The boundaries of Pakistan approximate the line of 50 per cent Muslims. Table 1 shows how imperfectly the religious communities were separated. The two Pakistan areas embraced five-

Table 1. Division of Communities

Community	All-India	Muslim-Majority Areas (Thousands)	Per Cent in Muslim Areas
Hindu	254,931	16,499	6
Muslim	94,389	53,431	57
Christian	6,317	522	8
Sikh	5,691	1,832	32
Total Population	388,998	73,362	19

Source: *Census of India 1941,* Delhi, 1943, Vol. 1. Data in second column are based on administrative districts in which Muslims had 50 per cent in British Provinces and Indian States, excluding Kashmir.

ninths of all Indian Muslims, of whom three in every five were in the eastern portion. The bulk of the forty million who remained in India were in the north: four million in East Punjab, 17 million in the Ganges valley (United Provinces, Bihar, and West Bengal) and one and a half million in Assam. Fifteen million were scattered over peninsular India with only two points of significant concentration: Hyderabad City, where the Muslim government is attempting to maintain independence, and in the vicinity of Calicut, where communal disturbances have occurred in the past.

About 16.5 million Hindus found themselves in Pakistan (three-fourths of them in the eastern part) and more than one and a half million Sikhs were in western Pakistan. It is the broad region of communal overlapping north and west of Delhi to Lahore and beyond that became the battleground during 1947. Emigration of Sikhs and Hindus from western Pakistan by the end of November 1947 is officially estimated to have been four million, with half a million yet remaining to come out. The influx of refugees to the

Union of India has been countered by an equal number of Muslims going west. At present virtually all Hindu, Sikh and Muslim minorities on each side of the western Pakistan boundary have been transferred. Tension exists elsewhere in the two Dominions but little movement has occurred. If all minorities were exchanged there would be twice as many Muslims entering Pakistan as there would be Hindus departing. However, it seems likely that such a disaster can be averted. Hyderabad State has agreed with India to keep the status quo for a year and the decision in Kashmir, it is hoped, will be reached with the mediation of the United Nations.

DIVISION OF RESOURCES

The uprooting of farmers, craftsmen, and merchants and the interruption of economic production has already created problems and the new international boundary will call for further adjustments.

The two Muslim areas which have little common history differ markedly in every respect. The western zone of Pakistan, together with the States acceding to it (Fig. 2), comprises more than 300,000 sq. mi. with a density over the whole of about 90 per sq. mi., ranging from 260 in the West Punjab to 95 in Sind and less than ten in Baluchistan. In contrast, the eastern zone covers only 54,000 sq. mi., having an average density of 775 and more than 1,000 around Dacca. Two-thirds of Pakistan's 70 million inhabitants live in the east which is one sixth of the total area. The Union of India, without Kashmir and Hyderabad, comprises 1,050,000 sq. mi., occupied by nearly 300 million people. Hyderabad and Kashmir, each 82,000 sq. mi., have populations of sixteen and four million, respectively. Portugal and France retain control of bits of coastal territory populated by less than a million altogether.

Per capita acreage under food grains reveals less contrast than gross area density between the two Muslim zones: 1.2 in the west and 0.4 in the east. The position of truncated India (0.7a. per capita) is not much better than eastern Pakistan and the food deficit of the war years served to emphasize the precarious demographic balance. Persistent movement of Bengali settlers into Assam during the past quarter century resulted from the pressure on agricultural resources in the eastern delta country. The ability of both Pakistan and India to resume rice imports from south-

east Asia is certain to be an important question in the near future. The small food surplus of the western zone of Pakistan and unused irrigable land along the Indus might provide a solution but great adjustments in food habits and mode of life will be necessary if the people of the eastern zone are to benefit, for wheat is the

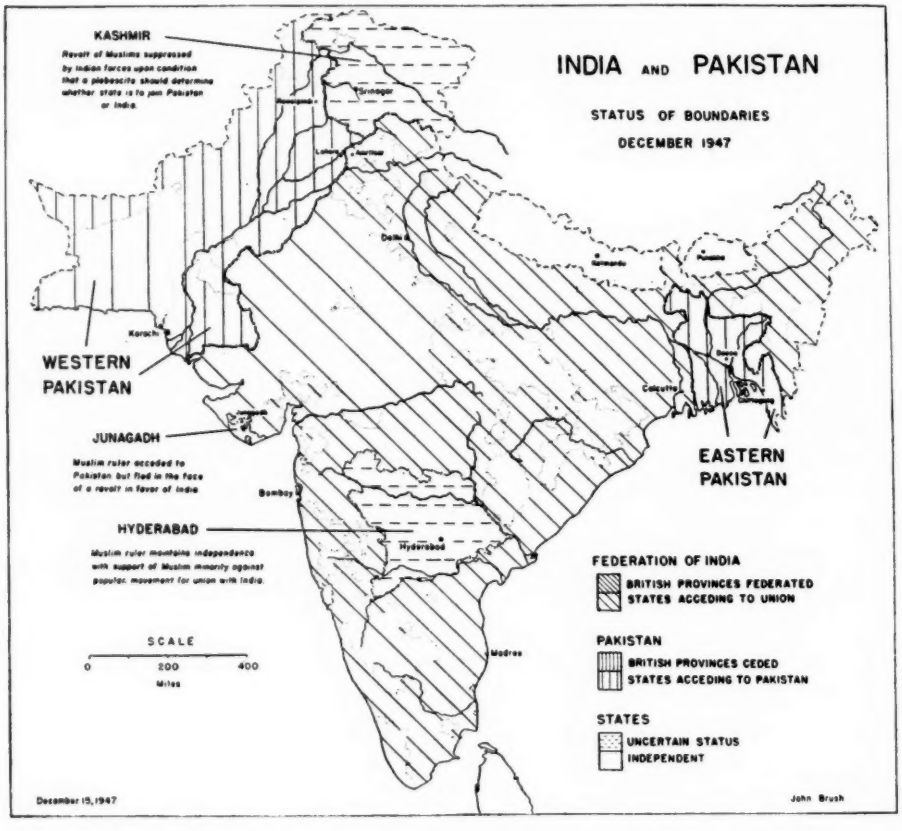

FIG. 2. The new political boundaries are subject to revision in Kashmir and Hyderabad, the two States which are expected to join Pakistan or India.

staple in the former area and rice is the main food crop in the latter.

Table 2 summarizes the division of agricultural and mineral production. The outstanding advantage of Pakistan regarding jute is outweighed by India's large share in other items. The better quality and yield of Pakistan cotton favors it more than acreage alone indicates. It is important to note that the major part of the All-India wheat surplus came from the Punjab and

Sind and the only reliable rice surplus came from Sind. The Muslim state does not contain the natural endowments necessary for heavy industry; whereas a variety of minerals suitable for industrial development exist in India. All of the high-quality reserves of iron, manganese and several other ores, as well as almost all of the coalfields, remain in India. In 1944 one per cent of India's production of 26.1 million tons of coal came from low-

TABLE 2. DIVISION OF RESOURCES

	All-India*	Pakistan	Per Cent in Pakistan
	Agriculture (Thousands of acres) 1938-39		
Rice	73,951	19,898	27
Wheat	33,765	9,352	28
Cotton	20,788	3,505	17
Sugar	3,231	489	15
Jute	3,125	2,367	76
Tea	822	96	12
Mineral Production	1944		
Coal	26.13 mil. tons	0.26	1
Iron Ore	2.36 " "	0	0
Petroleum	97.5 mil. gals.	15.2	15
Workers in Large Industrial Establishments		1941	
Cotton (Spinning & Weaving)	594,881	16,348	3
Jute (Spinning & Weaving)	310,624	0	0
Iron & Steel (Smelting & Rolling Mills)	54,117	0	0

* British Provinces and Indian States, including Hyderabad and Kashmir.

grade seams worked in the West Punjab and Baluchistan and 15.5 per cent of the 97.5 million gallons of petroleum came from Attock on the Indus. In view of these circumstances it is not surprising that the factory workers of the Muslim areas were chiefly engaged in the processing of agricultural products: rice-milling and sugar-refining, tea-drying and jute-pressing in the east; cotton ginning and baling in the west. Small quantities of cotton textiles and ordnance supplies comprised the only other industrial output of Pakistan.

TEA AND JUTE PRODUCTION

The money crops of eastern India have long been jute and tea. Transport of both these commodities converges on Calcutta. Altho Pakistan's share of the tea acreage is one-eighth, the large Indian production must now move across Pakistan en route to

domestic or foreign markets. The most important jute-growing region (Fig. 3) lies east of the waterway formed by the lower Ganges and Brahmaputra. Jute manufacturing, however, is concentrated in the Hooghly riverain, readily accessible to the fuel supply of the Damodar valley and to transshipment facilities at the Calcutta docks. Most of the raw jute of East Bengal is carried by boat across the delta.

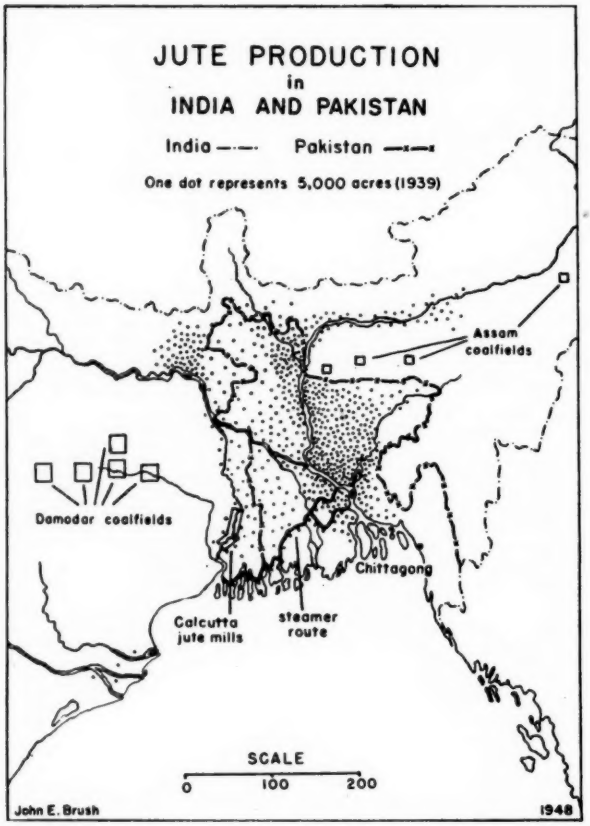

FIG. 3. Eastern Pakistan encompasses three-fourths of the jute acreage but the jute mills and industrial fuel supplies are under the control of the Indian Union.

A burlap shortage exists in many countries today on account of the newly-imposed jute export levy of Pakistan. Last year's crop was good but Calcutta mills are low in stocks and labor is scarce because communal tension prevented the usual influx of seasonal workers from the eastern delta. It is possible that enlargement of port facilities at Chittagong will enable Pakistan to ship raw jute overseas directly, but establishment of mills here is another matter. The cost of water-rail transit of Damodar coal or the longer rail haul from Assam coalfields (Fig. 3) would place the industry at a disadvantage. On the other hand, India may increase jute acreage in West Bengal and Bihar. The tariff policies of the two governments will determine whether the world-wide tea and jute trade will continue to move down the Hooghly estuary. Disturbance of the previ-

ous optimum production conditions may so increase costs as to endanger the near-monopoly once held by the delta jute industry and reduce the importance of the tea industry.

IRRIGATION IN THE PUNJAB

The partition of the Punjab presents another problem. Here, a unified government directed the construction of a complex irri-

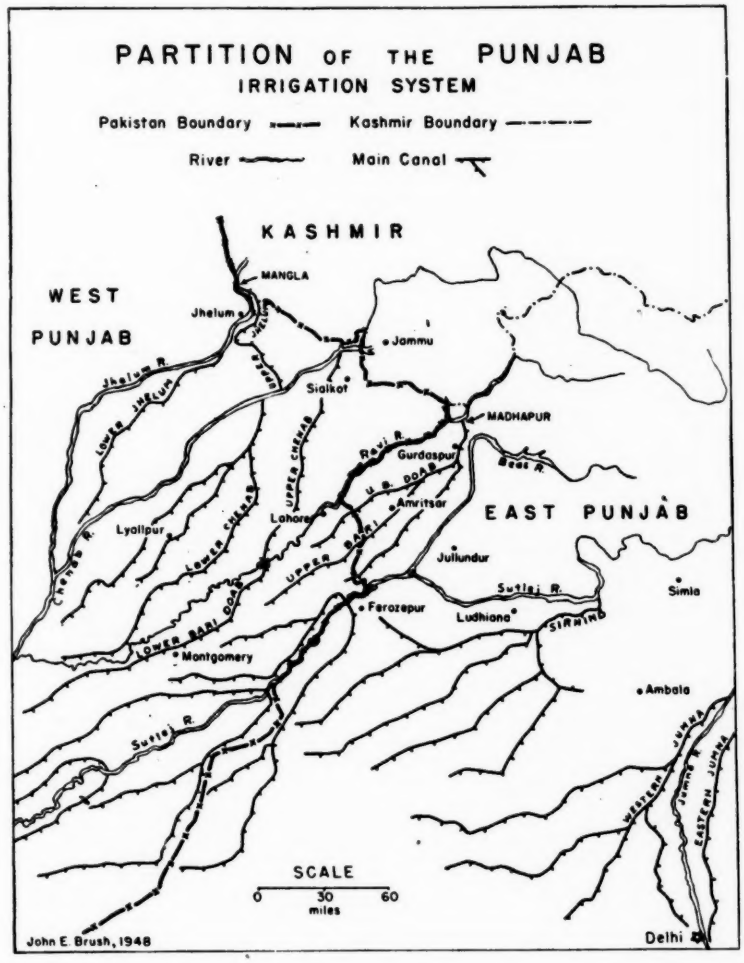

FIG. 4. International agreement will be required to regulate the use of irrigation water and hydro-electric power in the East and West Punjab.

gation system which provided a basis for the prosperous agriculture of the region. Rainfall declines sharply south-westward from

the Sub-Himalayan Punjab; so much so, that crops can not be raised west of Lahore without irrigation. Diversion dams located at the foot of the mountains (Fig. 4) and at other suitable points along the main streams bring water to the interfluves (*doabs*) by distributary canals. This nicely-balanced use of water resources permitted the colonization of the West Punjab by Muslims, Sikhs, and Hindus.

The new boundary runs slantwise across the watershed of the Punjab rivers, bisecting the irrigation system and placing western Pakistan's water supply at the mercy of India. The boundary commission arrived at the unhappy compromise which severs the complementary urban centers of Lahore and Amritsar and intersects the Upper Bari Doab canals. The Muslim claim to all territory north and west of the Sutlej River could not be upheld by the facts of percentage distribution of population (Fig. 1), but they had 50 per cent around Lahore and Gurdaspur, east of the Ravi River on the Bari Doab. Yet Amritsar, the holy city of the Sikhs, stands in the midst of the Doab and to give jurisdiction of the canal headworks at Madhapur to Pakistan would have put the Sikhs in a vulnerable position. The Muslims assert that the award enabled Kashmir to accede to India and to establish communications by a hastily-built road passing thru the foot-hills to the place where the Ravi debouches onto the plains.

Irrigation may become a serious problem if communal distrust persists. It is obvious that the amount of water taken from the Sutlej by the Sirhind canal will influence the supply available downstream in Pakistan. All of the irrigated tracts west of Lahore are indirectly dependent upon the Upper Jhelum canal, the headworks of which are not at present within the jurisdiction of Pakistan. Much of the flow diverted at Mangla in Kashmir reaches the Lower Chenab canal, thus permitting a great share of the Chenab River to be drawn off by the Upper Chenab canal. This canal waters not only the area north of the Ravi River but is led across it by an aqueduct to fructify the Lower Bari Doab also.

Hydro-electricity will be the key to whatever industrial development Pakistan undertakes. Existing and proposed electric power schemes in the Punjab are based on sites which lie in the mountains of India or Kashmir. This fact, in part, explains Pakistan's interest in gaining the accession of Kashmir. But international agreement, in any case, will be required to fully utilize irrigation and power resources of the Punjab rivers.

CONCLUSION

This brief survey of the geography of the partition of India outlines only a few of the problems facing the two Dominions. The fortunes of Pakistan rest upon the expansion of subsistence, together with the export of food grains and fibers. India needs these food surpluses to reduce its food deficit, which is made more severe by the division, and the raw materials to supply its textile industries. If the present blocks to trade are not removed, people on both sides of the boundary will suffer. But material considerations are often not the most significant factors influencing policy. The spirit of nationalism has been deeply stirred and no price seems too high to pay for independence.

GRADUATE TRAINING IN GEOGRAPHY*

S. VAN VALKENBURG
Clark University

Graduate education in geography should provide the best possible training for those who will form the future core of the profession, including those who will take leadership. The problem consists in selecting the right men and giving them adequate foundation on which they can later build their own house of knowledge. Graduate training is only the beginning, not the end.

This outline results from personal opinion and observation; many of its points are debatable and some may regard them as not well taken. It is not a record of what we do at Clark, altho, of course, we try to live up to the principles in which I believe. If I grade Clark on all items I must admit that we fall short in many instances; however, it is the goal we strive for.

What I wish to say can be divided into six parts:

1. Structure of a graduate department.
2. Selection of candidates for graduate training.
3. Study for the M.A. degree.
4. Study for the Ph.D. degree.
5. Placement of graduate students.
6. Cooperation between graduate departments of geography in different universities.

* Presented at the annual meeting of the National Council of Geography Teachers, University of Virginia, December, 1947.

Structure of a Graduate Department

It is difficult to give rules for the structure of a graduate department. Few departments—if any—are financially strong enough to have freedom to develop without limitations. Of course, the ideal structure is a well-rounded staff covering the major subdivisions of geography; a staff which can give all, or most, of its time to graduate training. They should be authorities in their fields, but that they represent variety of personalities and of approach is equally important. Too much inbreeding in the larger graduate departments should be avoided. Variety of opinion is a needed stimulus. Outsiders, American as well as foreign geographers, should be brought in frequently as visiting professors or lecturers. Exchange of professors between American graduate departments should be established even if only for one week visits, in which the visitors can give the best of their thoughts and studies. Teamwork is of greatest importance in a graduate department. A racing shell does not move smoothly if rowed by individualists, brilliant, as they may be,—it needs a well-balanced synchronized crew to make winning time. However, even in a crew there are outstanding figures; advanced graduate students should be permitted to work for a time with geographers of other universities (returning afterwards to the university of their choice for a degree) to profit by association with those they consider especially good in their selected field. In Europe students were wont to go to key men. It was the man who counted, not the university. In my own case, I studied at five universities and I have never regretted it.

The number of graduate students in a department should be limited; there should be enough to give a graduate atmosphere and a certain amount of mental competition but not so many that close contact between students and staff is lost. In Clark we have tried to gain that atmosphere by our workroom, where students spend most of the day in close contact with each other; in other universities it has been accomplished by other methods. Except for undergraduate honor students, the line between graduate and undergraduate should be sharp in class as well as in study.

It is also of value to expose students to authorities in related fields. Large universities have the advantage that many such fields are well represented on their campuses; otherwise, they should be brought in. A graduate department should not be an isolated unit. Geographers will be called upon later to work with

others; contact with such fields should be made during the training period.

It has already been mentioned that most departments have limitations as far as their structural development is concerned and that often the burden of undergraduate teaching falls too heavily upon them to allow sufficient time for graduate instruction. In several cases, the line of demarcation between undergraduate and graduate training is not definite, and the graduate becomes chiefly an advanced undergraduate. Departments which contemplate giving graduate work should carefully consider whether or not they are really prepared to do so. There is certain prestige in graduate work; in some cases pressure might come from the administration. Points to be considered should be not only availability of the right men and time to be given to graduate training but also right equipment, such as books and maps; graduate training demands a well-stocked library and map collection for reference. A cartographic laboratory and workroom should be provided. Equipment for field surveying, meteorological observations, and the interpretation of airplane pictures are all important.

Two steps must be considered when graduate instruction is introduced: first, training for the A.M., requiring basic courses and second, training for the Ph.D., with greater emphasis on the fields of concentration and methods of research. It can not be too strongly stressed that the decision to give, or not to give, graduate work is most important. For instance to give graduate degrees to teaching assistants without providing them with well-rounded graduate training does more harm to the profession than good.

SELECTION OF GRADUATE STUDENTS

Selection of graduate students should be made carefully, to protect the staff from wasting time and effort on those who have no chance of succeeding. An accepted candidate himself should be reasonably confident that he has ability and background to make good, while the staff at the same time regards him as a worthy prospect. In selecting students the following precautions should be taken:

1. The candidate should be certain that he wishes to study geography; he will need that conviction for the road ahead is long and tortuous.

2. His scholastic record should be good. At Clark we have to

satisfy the members of a Credentials Committee which scrutinizes closely all qualifications of a candidate.

3. He should have endorsement, if possible, of other reputable geographers. The recommendations should be carefully written, because in some ways the future career of the man involved is at stake.

4. Personal interviews are very helpful, especially because personality is a distinct factor for success.

5. The candidate should have had an adequate undergraduate training, with emphasis upon a broad cultural background. Ideally such training should include the following fields:

(a) English Composition.
(b) Proficiency in German or French or other modern foreign languages.
(c) Some strict scientific discipline such as Mathematics, Physics or Chemistry, Astronomy or Geology.
(d) Biology, Anthropology, or Ethnology.
(e) Some course or courses in Humanities (Economics, Sociology, etc.).
(f) History.
(g) Logic, Philosophy.

6. The candidate should have a major in geography or its equivalent. I should like to point out that quite a few have entered the field of geography as graduate students without such a major and have made good in the profession. Such will happen when the candidate discovers geography to be his chosen field too late to fulfill requirements for a major, or too little or no geography was offered at the college the candidate attended. Personally, I prefer a high quality man with a well-balanced cultural background, altho with little training in geography, to a man of lesser ability but having a long array of credit points in geography. In such cases, however, it will be necessary to make up deficiencies and take important undergraduate classes tho already accepted as a graduate student.

7. The candidate should be required to take a Graduate Record Examination. It is true that Geography is not included but the results are a good indication of his mental ability and knowledge and marked deficiencies in his background can be remedied.

While graduate departments can select from applicants the students they like to have, and many of them are excellent

prospects, it is nevertheless necessary to point out that we do not always get the best men. What can be done about it? Geography is a young field of study and has not been accepted as worth-while by all colleges and universities. Moreover, we face the disadvantage that geography is still neglected in most high schools and that the average matriculant in a college does not have it in mind when he makes out his program. Students come to us often by chance because they have been exposed to geography, and like it enough to continue; but that exposure might have come too late to change their plans. Geography should appeal strongly to young men and women if given a chance. The present influx of graduates is due more to personal contact with geography in war service than to training in universities. The average student in a large university has no idea that there is something called geography as a field of advanced training. If he had it, he might be strongly attracted by it. Accordingly, a large number of men who might have become prominent geographers are lost to us because we still represent a comparatively unknown field of study.

I cannot propose an immediate remedy except to select our graduates wisely and train them so well that they become prominent in university circles and thru their leadership attract young men and women of the highest caliber.

STUDY FOR THE MASTER OF ARTS

Altho the M.A. degree has relatively declined in value, the training for that degree is still of utmost importance. Here is laid the foundation on which to build. The training should be primarily basic, but on an advanced level. It must be basic for those who have no plans to continue their studies and will use the degree for teaching purposes. It should be basic also for those who go on for the higher degree, in order that they may have a good general knowledge before specialization in the field in which they are especially interested.

There will always be differences of opinion about what is basic. In general, the training should be a balance between the physical background (climate, terrain, soils, organic life, hydrography) and man's cultural response (economic, political and demographic). The controversy for or against determinism is an absurd one. Man must live in a certain environment; it depends on circumstances whether he more or less controls that environment or whether the

environment is the dominating factor. However, whatever the approach to the training may be, stress must be put on field work for all graduate students should become familiar with field methods in research and gain a feeling of strength and independence in out-of-door work.

Training for the M.A. degree should take two years to be effective. The prospective teacher needs that time in order to secure a solid background before he faces his classes; the potential Ph.D. candidate needs that time in order to be ready for later concentration. He should be ready to take up Ph.D. work without handicaps. The student interested in teaching needs besides his basic courses, regional knowledge—because of the importance of regional courses in his later teaching—as well as a course in Geography in Education provided, of course, that the student has had the necessary courses in education required for a teaching position. Teaching assistantships can also be of great help, giving the student teaching efficiency (besides financial advantages) but time given to that should not interfere seriously with the graduate training.

The writing of a thesis is still important, and should not be replaced by term papers. It gives the student valuable training in collecting and organizing material. A thesis with field work is preferable to a library thesis, altho not always possible.

The results obtained in the study for the M.A., the quality of the thesis, and also the performance of the student in his oral examination, make it possible for the Staff to advise him whether he should proceed to a higher degree or consider the M.A. his final academic achievement. In the latter case he should not feel disgraced; he is trained to be a good teacher and our profession needs many.

One problem which has been scarcely considered is the question of whether or not general deficiencies as shown by the Graduate Record Examination should be made up. One university actually provides for classes in fields such as English Literature for graduate students who are deficient. While this is probably a rather radical suggestion, graduate students should be asked to take undergraduate classes if necessary for their graduate work. For Instance, undergraduate meteorology should be requisite for graduate courses in climate. In summarizing, it may be said that the M.A. training should not lose value in a world clamoring for

Ph.D.'s; it is an important part in the training of all well-rounded geographers.

STUDY FOR THE DOCTOR OF PHILOSOPHY

Training for the Ph.D. degree is the most essential function of a graduate department, which has facilities to extend its activities beyond the M.A. degree. It is in this training that individual treatment should come to the foreground because each student presents a separate case. Consequently, the following suggested outline has only general value:

OUTLINE OF TRAINING

1. Making up deficiencies in basic training; these might occur when students after their A.M. shift to another university with a different point of view.
2. Taking more specific classes which did not fall under basic training.
3. Training in field technique on a more advanced level.
4. Seminars and discussion groups.
5. Advanced work in the major field thru research courses under supervision.
6. Broadening of geographic experiences thru carefully planned traveling, made possible thru travel fellowships.
7. Preparation for the preliminary Ph.D. examination including selection of fields of questioning.
8. Passing the language examination, if possible, before the preliminary examination is taken.
9. Selection and writing of a dissertation based on field work, an essential in the training of a professional geographer. He should be trained to become a productive scholar.

In the preliminary Ph.D. examination the stress should be on the major field which the student should know exceedingly well. Questions should stress the ability to think and not concentrate on factual knowledge.

While up to now the majority of our Ph.D. students have gone into teaching, it is quite possible that a change will come. The market for teaching geographers will gradually become saturated but replacements will occur. At the same time demand for research in geography has increased. The government has discovered that well-trained geographers are indispensable in various branches of government. It was true during the war and is true also in times of peace. Planning for state, county or city—so popular now in

European reconstruction—opens great possibilities. The field of the geographer in private business has scarcely been touched and yet who can judge the potential producer or consumer of the products involved better than a geographer? Graduate departments should keep that shift in mind; we must be ready to meet demands for such a market; in fact, we should try and make the world conscious that research geography can be of great help in many directions.

Placement

In placing students after they are prepared, major stress should be put on consideration of whether or not the man will fit into his new position and be happy. Salary should not be the only criterion for acceptance or non-acceptance, important as the financial factor is, especially after a period of study which has generally exhausted resources. When our graduate departments have a limited number of students, the staff obtains a good insight on the students, not only as geographers but also as individuals who react to social environment. A wise choice can accordingly be made. In these days of heavy demand for trained geographers, the process is perhaps somewhat neglected, but it is most important in order that geography can gain the respect of other fields and the new instructor becomes a valuable member of the faculty of his new school. Letters of recommendation should be honest, and the confidence of such information should be rigidly observed.

It is difficult to come to a definite conclusion on whether or not we should encourage students to interrupt the studies and accept positions, especially between the preliminary examination and the dissertation. Financial considerations at that time may be very important and it seems often that the thesis can be written (and the field work done) while teaching in some college. The unfortunate result is that many postpone completion of thesis work for many years and some never finish. One remedy to discourage long postponement would be to limit the duration of the validity of candidacy for the preliminary examination, but it is easy to make strict rules and difficult to keep them.

Co-operation Between Graduate Geography Departments

In an expanding field—and if we do not expand our spheres of influence, we are doomed—it is essential that various centers where graduate work is given keep in contact with each other. They can

agree about certain principles, such as rules of admission. They can frequently exchange students as well as professors. They are all working with the same goal in mind—to be of service in training better citizens and to increase knowledge of the world and its many problems. While they may disagree on certain minor points, the feeling of solidarity should prevail. There should not be cut-throat competition. There is a place for all. Neither the National Council, the A.A.G. nor the A.S.P.G. offer the necessary framework for such co-operation. It is to be hoped that it will be possible in the near future to find a way to bring the graduate departments together into some kind of organization. Isolated we may fail, as a strong co-operating unit, we will succeed.

UNIT VI. THE U.S.S.R.—LAND OF THE SOVIETS FOR COURSE IN GLOBAL GEOGRAPHY*

MARY VIOLA PHILLIPS
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I. OVERVIEW

"Of all the great countries of the world, U.S.S.R. is the least known to Americans."

We cannot afford to remain in ignorance about the geography of one of the world's major powers. A geographic understanding of U.S.S.R. is vital for an adequate appreciation of present world problems. This unit attempts to present information about the land, its location and size, the climatic conditions, physical features, the various peoples, their activities and their cultures, natural resources and their distribution, the industrial development and all other environmental and human factors which lie behind this country's achievements.

II. OUTLINE OF SUBJECT MATTER

A. Location and Size
   1. Range of latitude—almost entire country lies north of United States—Black Sea and Caspian Sea in latitude of Great Lakes.
   2. Range of longitude—extends almost halfway around earth.
   3. Area—one-seventh of earth's surface.
   4. Location in respect to land and waterbodies. Proximity to the United States.

* For other units, see the JOURNAL for Sept. and Nov., 1945, Mar., Apr., and Sept., 1946, May, 1947, Jan., 1948.

B. Population
1. Composition and distribution of
2. Languages and dialects
3. Number—(one-tenth of world's people)
4. Government—structure, organization, administration
   a. Constitution of 1936
   b. Five Year Plan—Economic Objectives
      Results—industry—agriculture—transportation—education—mining and power development
5. Religion
6. Education

C. Major Physical Features
1. Lowlands—vast plains not much above sea level
   a. Central European Lowlands
   b. Central Russian Lowlands
   c. Black Sea Lowlands
   d. Central Asian Lowlands
   e. West Siberian Lowlands
2. Highlands of Southern U.S.S.R.
   a. Influence of east-west direction in flow of rivers
   b. Influence of east-west direction on climate
   c. Name of highlands from east to west
3. Northern Highlands
4. Baltic Uplands
5. Central Russia Uplands

D. Climatic Characteristics—cold and aridity dominant features
1. Controlling factors
   a. Latitudinal position—80 per cent area in middle latitudes, 16 per cent area in high latitudes, 4 per cent area in sub-tropical
   b. Wind belts—prevailing westerlies carry oceanic influence inland bringing vapor, prevailing northeast winds—originate in heart of continent
   c. Marine influence—very little
      (1) South—mountain barriers cut off influence from Indian Ocean
      (2) Pacific lies to leeward—wind blows off short
      (3) Arctic Ocean—frozen much of year—area of ice free water as a source of vapor is not large
      (4) Atlantic—most rain is of Atlantic origin
      (5) Seas and lakes have warming influence on regions bordering them
2. Precipitation
   a. Low precipitation dominates—only a few areas in west and higher mountains receive more than 20 inches rainfall annually—Asia and northeastern Siberia have under 8 inches
   b. Rain occurs chiefly in summer
   c. Heaviest precipitation in west because rain comes largely from Atlantic

E. Vegetation or land belts
1. Tundra
   a. Location and extent—north of Arctic circle and within 250 miles of ocean
   b. Climatic conditions—long winters, short summers
   c. Animal life—birds, polar foxes, reindeer, ermine
   d. Vegetation—lichens, mosses, low brush, dwarfed birch and willows
   e. Inhabitants—sparse—nomadic life

2. Taiga
   a. Location and extent—south of Tundra—extends 4,000 miles across northern Russia—average breadth from 600 to 1,000 miles
   b. Climatic conditions—cool temperature, ice bound two-thirds of year—winters severe, summer temperature 50 to 68°F.
   c. Animal life—wild boars, reindeer, leopards and Manchurian tiger
   d. Vegetation—forests one-fifth of that of earth—coniferous such as pines, spruce and larch—softwoods—birch and aspen—oak and other hardwoods—meadows intersperse
   e. Inhabitants and activities
3. Black soil belt—"Grain Breadbasket of Europe"
   a. Location and extent
   b. Favorable climate—sufficient rainfall
   c. Soil—richest in world—top soil five to six feet deep
   d. Vegetation—natural and cultivated—leading crops
   e. Level surface—ease of farming
4. Steppe
   a. Location—southern third of country—east of Caspian Sea the steppes pass into semi-arid
   b. Climate—dry
   c. Vegetation—grass lands—treeless
   d. Animal life
5. Desert
   a. Climate—under 10 inches rainfall
   b. Vegetation of oasis—figs, dates, grapes, apricots, cotton
   c. Animal life—sheep, goats, horses, camels
6. Mountains
   a. Climate—zones extend from summer at base to perpetual winter at top
   b. Animal life—tiger and wild boar on warmer slopes, bighorn sheep on higher and cooler crests
   c. Vegetation—steppe vegetation on lower slopes to 3,000 feet—forests to 6,000 followed by Alpine meadows—snow line 9,000 feet

F. Natural Resources
1. Mineral wealth
   a. Vast deposits of coal—ranks next to U.S. in coal reserves—coal is chief source of power
   b. Large quantities of iron ore in central and southern regions
   c. Oil in far southeastern section
      (1) Rich petroleum fields of Baku on Caspian, Batum on Black Sea, fields north of Caucasus and north of Central Urals
      (2) Sakhalin chief area in Far East
   d. Other minerals—manganese, copper, lead, zinc, bauxite, nickel, gold, platinum
   e. Non-metals
      (1) Potash—northern Urals
      (2) Apatite—source of phosphate—north of Arctic Circle in Khibin Mts. and Kola Peninsula
      (3) Asbestos—Urals
      (4) Gems and semiprecious stones in Ural Mt. region
      (5) Koalin—Ukraine
      (6) Fire clays—Moscow Coal Basin and Ukraine
      (7) Mercury—Donets Basin and Urals

f. Hydroelectric—mountain streams and large rivers
g. Forests

G. Agriculture
1. Amount of arable land—87 per cent of Soviet Union or 432,700,000 acres
2. Location of arable land—most found west of Urals
a. Greatest agricultural area is irregular wedge of land extending from Leningrad to the Black Sea and east to Lake Baikal
3. Agricultural frontiers
a. North—fringe settlement where short growing season limits crop yield
b. South—areas of drought with limited and erratic rainfall
4. Methods used to increase agricultural area
a. Use of virgin steppe land in Siberia
b. By irrigation of dry lands east of Volga or Middle Asia
c. Drainage of marshes
5. Organization of farms
a. Collective farms—co-operative share of ownership under active control of government—workers receive share of harvest
b. State farms—workers paid wages
c. Equipment—modern tractors and harvesting combines are promoted thru Tractor Stations
d. Home life of farmers
6. Products
a. Grain crops—wheat and rye dominant crops—barley, oats, corn and rice
b. Technical Crops
(1) Cotton as far north as 48° N. Latitude
(2) Flax—White Russia near Moscow and Leningrad
(3) Sugar beets—Ukraine, around Kursk, Caucasus, Middle Asia and Far East
c. Subtropical crops—grapes, tea, oranges and other citrus fruits

H. Other Industries
1. Lumbering widespread
2. Textile manufacturing—linen, cotton, wool
3. Food industries
4. Fishing industries—sturgeon and caviar dominant in Volga River section
5. Grazing—use of steppes for cattle and sheep grazing—breeding of fine, spirited horses
6. Mining

I. Transportation
1. Railroads—difficulty in building on freezing and thawing soils—15 per cent of earth never thaws below 5 feet
a. 1940—62,500 miles as compared with 36,350 miles in 1913
b. Trans-Siberian Railroad—extent
2. Utilization of Waterways
a. Rivers
(1) Most rivers flow north toward icebound ocean or enter land-locked seas
(2) Volga is premier waterway—carries half country's freight
(3) Elaborate system of canals
3. Highways
a. Natural dirt roads predominate
b. Poorly developed—scarcity of crushed rock limits foundation material
c. Motor transport beginning
d. Hard surfaced roads in 1941—30,000 miles as compared with U.S. 1½ million miles

e. Use of reindeer in Arctic
f. Camel caravan across Kazakstan both winter and summer

4. Airways and their effect on the geography of the country
   a. Polar regions are the new air frontiers with flying fields and weather stations
   b. Makes possible use of Arctic for trade by opening sea routes and harbors
   c. Airplane unlocking the wealth of nation—obstacles such as mountains, trackless forests, great distances and deserts overcome by airplanes
   d. Rapid development of air routes—Alaska—Siberian route, great internal air routes—covered 86,800 miles in 1944

J. Communication
   Use of radio, press, telephone as compared with other countries

K. Chief Cities
   1. Location
   2. Accessibility
   3. Accessibility to mineral wealth
   4. Industries
   5. Architectural beauty
   6. Historical associations
   7. Home life in cities

L. Relation of U.S.S.R. to Other Countries
   1. Neighbors in Europe
      a. Position in respect to European nations before World War II
      b. Position in respect to European nations since World War II
   2. Neighbors in the Far East
      a. Russian influence—extent of
      b. Past and present policy toward Japan, Korea, China
   3. Russian and British Empire
      a. Effect of British influence in Near East
      b. Past and present controversy over outlet to sea in south
   4. Russia and the United States
      a. Location in respect to United States—Bering Strait
      b. Past and present relationship

III. Study Assignment Sheet

Unit VI. (Laboratory Work)
U.S.S.R.

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World Almanac

1. In what latitudes does this country, whose land area is as big as the face of the moon, lie? What is its area in square miles? Compare its area with that of the world. Compare it with the United States.
2. Between what two degrees of longitude does U.S.S.R. lie? Between what two degrees of latitude? Approximately how far around the earth does this country extend?
3. Describe the topographic features of U.S.S.R. Name the mountain systems. Where are they located? Where are the lowland areas? What occupation does the topography lend itself to?
4. On an outline map of the U.S.S.R. show the following:
   (Desk map or blackboard map)

rivers	industrial centers
mountains	inland cities
seas	seaports
agricultural areas	hydroelectric plants

5. What are the chief climatic characteristics? Describe the temperature and rainfall. (Summer and winter)
6. Find the climatic data for the following cities of U.S.S.R.

Cities	Av. Summer Temp.	Av. Winter Temp.	Annual Precipitation
Moscow	.....	.....	.....
Leningrad	.....	.....	.....
Vladivostok	.....	.....	.....
Baku	.....	.....	.....
Tomsk	.....	.....	.....
Odessa	.....	.....	.....
Yakulsk	.....	.....	.....
Tashkent	.....	.....	.....
Batumi	.....	.....	.....

7. What is the population of U.S.S.R.? Compare its population with five other large countries. With the world population. Make a list of the different groups of people living within U.S.S.R.
8. Use the latest statistics you can find and fill in data regarding the present wealth of natural resources in U.S.S.R. and in the United States

Natural Resources	U.S.S.R.	U.S.A.
(1) Known coal reserves	.....	.....
(2) Prospected oil fields	.....	.....
(3) Iron ore beds	.....	.....
(4) Forest reserves	.....	.....
(5) Black soil area	.....	.....

9. How does the Soviet Union compare with other nations of the world in the natural resources listed above?
10. Make the following maps to show the vast achievements in the first two decades of U.S.S.R.
    (1) Water Power
    (2) Major Industrial Districts

(3) Major Mining Districts
(4) Transportation—Railway and Airways

11. Study the different vegetation on land belts of U.S.S.R. and complete the following chart.

Belts	Location	Climatic Characteristics	Natural Vegetation	Chief Activities
Tundra	.....	.....	.....	.....
Taiga	.....	.....	.....	.....
Steppe	.....	.....	.....	.....
Desert	.....	.....	.....	.....
Mountains	.....	.....	.....	.....

12. Where are the chief centers of agricultural production located? What are the leading crops of U.S.S.R.? What natural factors favor the raising of these crops? How is agriculture organized in U.S.S.R.?
13. Compare the leading crops of U.S.S.R. with the leading crops of U.S.A. Select five crops that are grown in both countries and make a graph to compare production.
14. How well developed are the transportation systems of U.S.S.R.? Describe the role of railroads, motor transport, water transport and air transport.
15. Compare the mileage of the following methods of transportation with United States and the world.

	U.S.S.R.	U.S.A.	World
Railroads	.....	.....	.....
Highways	.....	.....	.....
Airways	.....	.....	.....

16. To what extent have the rivers been used for transportation? Name them. What are the advantages? the disadvantages?
17. On what oceans does U.S.S.R. face? What are the disadvantages that U.S.S.R. must face in ocean transport? What outlets must U.S.S.R. use in her ocean transport? Compare the extent of its coastline with that of United States. Why are the seacoasts of little value?
18. What animals are used for transport? In what areas? Why?
19. How has the use of the airplane helped to unlock the wealth of the nation? What activities are being carried on in the Arctic coastal region in respect to air navigation?
20. The country of U.S.S.R. is so large that many of its people live farther away from Moscow than do people of New York City and other cities of the world. On a globe find the great circle distances between Moscow and the following cities.

Cities	Distance from Moscow
New York	.....
Vladivostok	.....
Berlin	.....
Tashkent	.....
Helsinki	.....
London	.....
Warsaw	.....
Novosibirsk	.....
Petropavlovsk	.....
Alma Ata	.....

Place these cities on a polar projection map and connect each to Moscow with a line on which the distance is given. (Desk maps or blackboard map)

21. Summarize in paragraph form facts concerning the following topics—religion, education, government, Five Year Plan, and sports.

22. Make a list of the leading exports and imports of U.S.S.R. With what countries does U.S.S.R. carry on the greatest amount of trade?
23. Make a time chart showing important events that have taken place in U.S.S.R. from 1900 to the present time.
24. What are the present relations of the U.S.S.R. with the Far East? the Near East? the United States?
25. Make a collection of newspaper clippings, maps and other current materials on present day happenings in U.S.S.R.

SOME PRINCIPLES OF GEOGRAPHY

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Whenever we meet some of our old students who had geography with us, possibly ten years ago, it is interesting to note that what they have remembered thru the years are the principles and the ideas brought out in geography classes and not the facts. After more than thirty years of college teaching I am convinced that principles are what should be emphasized in geography teaching and that minor emphasis can be placed upon facts. If students retain facts, it is because of memory. If students retain principles, it is because teachers have stimulated student thinking and have had some part in developing their reasoning ability. This is not meant to say that a reasonable amount of facts is not important. They are important because no one can understand principles without a basis of factual knowledge. My point is, simply, that facts should not be taught alone by themselves for their factual value, but taught, rather, in connection with the principles of modern geography.

I find that for a few weeks it is difficult for my students to grasp the difference between a principle and a fact. May I illustrate the difference by two or three examples? It is a fact to say that New York City is at the mouth of the Hudson River where it enters the Atlantic. It is a principle to say that cities tend to develop at or near the mouths of navigable rivers which drain productive hinterlands. It is a fact to say that the Swiss people are prosperous, highly civilized, and a respected people among the nations of the world. It is a principle to say that a hilly or mountainous topography tends to develop a backward people. From these examples one may see that a geographic principle often states a generality which is usually true, but to which many exceptions may be found.

In most college and university administrative set-ups, geography has to declare itself as a social or physical science. Administrative machinery does not permit it to straddle the fence. Critics of geography tend to ridicule our science because we can not pigeonhole ourselves as either a social science or a physical science. When a decision must be made, I believe that geography is much more on the side of a social science than it is a physical science.

They criticize further because we can state but few principles that are exact. When we do establish an exact principle in geography, it usually concerns weather and climate, or physical geography. The great field of geography which has to do with man and his relations to his environment is seldom productive of exact principles. Therefore, geography, like the rest of the social sciences, must be classed as an inexact or abstract science. This should not frighten geographers or cause them to hang their heads because they must formulate generalities and call them principles. The word "generality" seems to be in some disrepute. I can't see why it should be. To me generalities are far more mentally stimulating and thought provoking than facts. Most people cannot possibly become very excited because the sum of the squares on the legs of a right triangle equals the square on the hypotenuse. It was true yesterday, is today, and will be tomorrow. But in Human Geography such an idea is exciting because, geographically, the sum of the squares of the legs doesn't always equal the square of the hypotenuse. This is because of the variations of the human element. One can never tell for sure what the responses and reactions of the human being is to be to environment and heredity. For example, referring again to hilly or mountainous environments, sometimes they produce an Abraham Lincoln. Discussion of a generality stimulates thinking and argument. It develops a critical point of view on the part of the student. He becomes less inclined to swallow whole what the book or his instructor says.

In an attempt to clarify the difference between principles and facts, or rather to emphasize principles and to show teachers how mentally stimulating the study of geography can be, I offer examples of five principles under each of the factors of geographic environment. They are not meant to be exhaustive but, rather, suggestive. If you try them out with your more mature students, you will find that they stimulate discussion, develop reasoning, and that they cause a student to read his textbook with a much more critical

eye. It should be noted that some of these principles can be placed under more than one factor of environment.

LOCATION

1. The farther from the equator, the greater the variation in the length of days and nights during the year.
2. The farther from the equator, the less is the influence of the direct rays of the sun.
3. The mathematical or natural location of a place never changes but the vicinal location of the same locality changes with the development of better transportation or of natural resources.
4. Towns or cities tend to develop where rivers used to be forded.
5. A product which is obtained from the interior of a continent finds it difficult to compete in foreign markets with that produced along a sea coast.

AREA

1. Land masses can be so large that the climate of their interiors tends to be inhospitable to most human activities.
2. Nations can be so large that their people lack unity.
3. The smaller nations tend to be more dependent on the outside world than do the larger ones.
4. Small nations are likely to be danger spots in world politics.
5. Large size in a nation makes it less vulnerable to conquest by an enemy.

FORM

1. For a continent, great shoreline irregularity is more advantageous than regular coast lines.
2. Large indentations of the ocean tend to moderate adjacent land climates.
3. A peninsula tends to have much the same human and physical responses as an island.
4. Major protuberances on a continent's outline often tend to intersect ocean trade routes.
5. For a state or a nation, a compact blocky form tends to be more advantageous than an attenuated form (Uruguay versus Chile).

LAND FORMS

1. Mountain environments tend to attract few professional people.
2. Isolated islands tend to develop qualities of language, custom and dress considerably different than mainlands.
3. Because of the danger of floods and poor drainage, deltas are often not good places for human occupation.
4. Mountains which parallel a sea coast are more of a barrier to contact between the sea and the land than are those which trend at right angles to the coast.
5. Plateaus in the Tropics tend to be used for living abodes and temperate agriculture while those of middle latitudes are more often used for grazing and mining.

WATER BODIES

1. Large bodies of water tend to moderate the climate of lands provided the prevailing winds are from off the water.
2. Water bodies, if effective on the climate of the land, will send their moisture influence farther inland than their temperature influences.
3. It takes a much larger body of water to influence the precipitation of lands than it does to affect the temperature.
4. Transportation costs on the oceans tend to be cheaper than that on inland waters.
5. In the growth of a nation, in its youth, people tend to use their inland waters for navigation; in maturity they use the valleys for roads and railways; while in old age they may turn again to the use of the streams for navigation.

WEATHER AND CLIMATE

1. When weather is unchanging as in the rainy low latitudes people do not talk about it.
2. The higher the civilization the higher the latitude.
3. All other conditions being favorable, immigrants tend to follow their homeland isotherms.
4. The windward sides of mountains tend to be the rainy sides while leeward sides usually lack precipitation.
5. The higher the altitude the lower the temperature and pressure.

SOILS

1. A good soil region, even as a poor one, tends to trade mark or brand the people who live on it.
2. The better moist tropical soils tend to be in those physiographic locations where the soil is being renewed each year.
3. The steeper the slope the thinner the soil and the more dangerous it is to plow it.
4. Soils of dry regions tend to have all the elements of fertility.
5. The South Eastern quarter of the United States tends to depend more upon residual soil for its agriculture than any other quarter.

MINERALS

1. The mining industry does not usually distribute population equally over as large an area as does agriculture.
2. Mineral fuels tend to be the products of the rocks under. plains.
3. Mining may develop both boom and ghost towns.
4. Mining tends to be a destructive exploitation.
5. Nations tend to quarrel over oil, iron ore, and coal quicker than over other minerals.

PLANTS

1. Plants tend to do best when grown about the middle of the poleward half of their habitat.
2. Plants in the Tropics grow in great variety while in the temperate regions there is less variety but great numbers of a given species.
3. Around a water body plants tend to zone themselves according to their water requirements.
4. Windward sides of mountains tend to be better forested than leeward sides.
5. Man's agriculture habitat tends to be widened because of the long summer days of high latitudes.

ANIMALS

1. Tropical waters tend to yield great varieties of fish while temperate waters yield fewer varieties but greater schools of each variety.
2. If a newly discovered continent fails to have animals which

can be domesticated it slows up the conquest of the continent by man.

3. Land areas which are isolated from other lands have an animal life which is usually less farther advanced in evolution than lands which are connected.
4. Hunting and fishing for commercial purposes cannot compete with increasing populations.
5. Wild animal life tends to be restricted to those lands which are not useful for other purposes.

MAN

1. Man is as lazy as he can afford to be.
2. Civilization is a product of reasonable adversity.
3. "The great trouble with most people and with most races is not that they lack ability, but that they do not make full use of what they have."*
4. A high per capita consumption of fish usually means a low standard of living.
5. People who evaporate sea water for their salt supply usually have a low standard of living.

Two American geographers have been outstanding in the development of geographic principles. They were Dr. Ellen Churchill Semple and Dr. Ellsworth Huntington. Since both are lost to us the cause of geography in the United States needs missionaries to carry on their work. In my opinion, too many of our geographers are interested in facts for facts sake. In my humble way I hope that this article may serve to keep the lamp of geographic principles burning.

* Ellsworth Huntington, Principles of Human Geography.

GEOGRAPHIC ORIGINS OF RELIGIOUS DIVERSITY IN EURASIA

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I. INTRODUCTION

Is variety in the physical environment partially responsible for religious diversity in Eurasia? Is variable rainfall one of the factors which have facilitated the rise of Islam in Southwest Asia? Is enervating climate related to the prevalence of Hinduism in India? Have stimulating climate and dependable rainfall any connection with the dominance of Confucianism in China and Christianity in Europe? These are some of the main questions to be analyzed in this paper.

For the purposes of this investigation it will be profitable to classify each religion according to whether it is militant or pacific, and optimistic or pessimistic. Those religions which advocate acts of aggression for any purpose will be classified as militant. Those which condemn acts of aggression for any purpose will be classified as pacific. Those which assume that personal immortality is preferable to personal extinction will be classified as optimistic. Those which assume the opposite will be classified as pessimistic.

Three great divisions of Eurasia will be analysed in this paper: the Humid Middle Latitudes; the Dry Areas; and the Humid Low Latitudes. The High Latitudes will be ignored on account of population sparsity and retarded culture.

II. MILITANT OPTIMISM IN DRY AREAS

A. Islam

1. *Extent.* Islam is almost completely confined to the dry areas of Eurasia. Detached and isolated outliers of Islam occur in Albania, Northeast India, and Oceania. However, these minor exceptions are quite insufficient to nullify the general rule of Moslem containment in Dry Areas. The strongholds of Islam are North Africa, South West Asia, Arabia, Turkestan, and Northwest India.

2. *Characteristics.* Islam is a religion of militant optimism. The orthodox Moslem is relentlessly hostile toward counter religionists in accordance with the maxim of Mohammed that all infidels must be compelled to choose among "Islam, tribute, and the sword." Moslems who die as the result of combat in Holy War

against the infidels do so in confident expectation of immediate admission to a paradise indescribably alluring and surprisingly materialistic.[1]

Islam promises the faithful perpetual residence in an earth-like Heaven abounding in "black-eyed maidens" and mirth-provoking but non-intoxicating beverages. Islam regards personal extinction as being neither possible nor desirable.

3. *Explanation.* Altho Christianity secured a foothold in Southwest Asia 580 years before Islam, the latter overtook, outstripped, and uprooted the former in that area with remarkable rapidity. One reason for the triumph of Islam over Christianity in Southwest Asia has been economic instability arising from variable rainfall.

As a general rule the variability of rainfall increases as its amount diminishes.[2] Those areas which have the smallest amount of rainfall also have the least dependable rainfall. Highly variable rainfall may be tolerable in a region having a considerably greater average rainfall than is absolutely necessary for satisfactory crops and pastures. But the same phenomenon is catastrophic in dry areas whose average rainfall is barely sufficient to provide sustenance for wide-ranging nomads. Years of comfortable abundance alternate with years of desperate scarcity. Were it possible for the dry-area nomad to adjust his herding operations to the same amount of rainfall each year, he could become self-supporting at all times, even if average rainfall were quite low. However, years of devastating drought abruptly deprive the nomad of his means of livelihood. His waterholes dry up, his herds die off, and his food supply runs out. At such times he must either plunder or perish. He must drive the people of other tribes away from the few waterholes not yet empty, he must steal the herds and treasures of outsiders, and he must raid city dwellers and farmers in the oases and on the margins of the desert. The habits acquired in dry years tend to persist in wet years. Many nomads steal during all phases of the rainfall cycle. This kind of situation gives rise to a tribal morality as opposed to a universal morality. For economic, social, and military reasons the nomad is a good neighbor to his fellow tribesmen, but an exceedingly poor neighbor to the out-

[1] William Stearns Davis, *A Short History of the Near East,* Macmillan, New York, 1943, p. 117 ff.

[2] Glenn T. Trewartha, *An Introduction to Weather and Climate,* McGraw-Hill, New York, 1947, p. 227.

sider whom he views as his natural prey or enemy. Nomads accustomed to tribal morality are infrequent converts to Christianity whose basic ethical concept is universal morality, i.e., friendly treatment of all men at all times.

The aggressive proclivity of the dry-area nomad is thoroly incompatible with Christianity but quite congenial with Islam. The injunction to present the infidel with a choice among "Islam, tribute, or the sword" was an excellent pretext for the Saracenic and Ottoman hordes to attack their neighbors. Even after the bulk of the dry areas of Eurasia had been Moslemized, it was still possible for the nomads to engage in Holy Wars. The supply of nearby infidels having been depleted, a vast stock of heretics could be conjured up from time to time. Theological disputes such as the succession to the Caliphate of Bagdad could become the occasion for extensive blood-letting and bone-crushing.

III. Pacific Pessimism in Humid Low Latitudes

A. Hinduism

1. *Extent.* Hinduism flourishes in the more humid regions of India and in Southeast Asia. It exerts negligible influence outside of the Humid Low Latitudes of Eurasia and Oceania.

2. *Characteristics.* Completely unlike Islam, Hinduism is a religion of pacific pessimism. The orthodox Hindu disapproves of force and violence as instruments of policy. The doctrines of Non-violence and Passive Resistance to foreign rule enunciated by Mohandas K. Gandhi accord with Hindu temperament and tradition. Altho there have been noteworthy departures from these methods, the Hindus as a people are far from being warlike and aggressive.

The foremost goal of the orthodox Hindu is escape from the cycle of reincarnation in which the soul migrates to a new body whenever an old body dies. Hinduism judges life to be fundamentally evil, painful, and repugnant. Hinduism asserts that the total extinction of individual personality is a most commendable end for human endeavor.

3. *Explanation.* One factor which probably accounts for the prevalence of Hinduism in Humid Low Latitudes is an enervating climate which tends to deprive the people of Humid India and Southeast Asia of the energy and stamina required for the most effective utilization of natural and human resources. Kithal aggre-

gations deficient in the physical drive necessary for the satisfactory solution of the basic material problems of mankind are liable to reach the pessimistic conclusions that life is unavoidably irritating, burdensome, and disagreeable; and that the extinction of personality is the only escape from unbearable distress. For a community which has arrived at these conclusions, a religion of pacifism and pessimism like Hinduism is a consistent ideological adjustment.

There are several respects in which the climate of the Humid Low Latitudes of Eurasia is inferior to those of its Humid Middle Latitudes and its Dry Areas relative to effect on human energy.

Human energy tends to reach its highest level when the rate of body heat loss is neither too fast nor too slow. As a general rule the rate of body heat loss becomes too slow when average temperatures rise above 65° F. as in the Humid Low Latitudes of Eurasia. Average temperatures are substantially lower and more invigorating in Europe, North China, and Central China. Average temperatures in South China are similar to those in India and Southeast Asia. However, North and Central China have been far more vigorous and potent than South China in molding East Asian culture. All founders of Chinese dynasties were born north of the Yangtze River.[3]

Unlike the Humid Middle Latitudes of Eurasia, the Dry Areas have no substantial advantage over the Humid Low Latitudes as regards average temperatures. However, the dry areas share with the Humid Middle Latitudes the advantage of having more stimulating temperature cycles than the Humid Low Latitudes. The changeable temperatures of the former have a decidedly more favorable effect on human energy than the monotonous temperatures of the latter.

Another advantage of the Dry Areas as compared with the Humid Low Latitudes of Eurasia, is a faster rate of body heat loss by way of perspiration. The rate of evaporation of all moisture, including body moisture, is more rapid in dry than in wet areas.

B. Indian Buddhism

1. *Extent.* The Indian type of Buddhism is practically confined to the Humid Low Latitudes of Eurasia.

2. *Characteristics.* At the present time there is no fundamental

[3] Lin Yutang, *My Country and My People,* Reynal & Hitchcock, New York, 1935, p. 19.

theological discrepancy between Hinduism and the variety of Buddhism prevalent in the subcontinent of India and Southeast Asia.

3. *Explanation.* Hinduism and Indian-type Buddhism are practically identical adjustments to a common environment.

IV. Pacific Optimism in Humid Middle Latitudes

A. Chinese Buddhism

1. *Extent.* The Chinese type of Buddhism persists thruout China and Japan despite a marked decline in its influence during the past 1,000 years.

2. *Characteristics.* Altho Hinduism and Indian Buddhism have become quite similar during several millennia, a striking difference has developed between Indian and Chinese Buddhism. The latter has evolved from a pessimistic into an optimistic creed. Instead of regarding escape from the cycle of reincarnation as his foremost purpose, the Chinese Buddhist now anticipates admission to Heaven, or fears condemnation to Hell.[4] Nirvana, or total extinction, remains a theoretical possibility, but has ceased to be a desideratum. Like the other major Chinese religions, Buddhism now judges life to be worth living, and looks forward to its continuance on this and other planes of existence.

3. *Explanation.* One factor probably responsible for the metamorphosis of Buddhism in China is its having been transplanted from a region of decidedly enervating climate to one of moderately stimulating climate. Having more energy and stamina than the people of Humid India, those of China are better able to attack the material problems of mankind and are less inclined toward despair, resignation, passivity, and weltschmerz. The general outlook of the Chinese is optimistic whereas that of the Indians is pessimistic. In order to convert a community, the advocates of an ideology must accommodate its tenets to the general outlook of that community to some extent. No community can be persuaded peacefully to accept an ideology totally at variance with its general outlook.

B. Confucianism

1. *Extent.* Like the Chinese type of Buddhism, Confucianism extends thruout China and Japan.

[4] Kenneth S. Latourette, *The Chinese: Their History and Culture,* Macmillan, 1938, p. 127.

2. *Characteristics.* There is disagreement as to whether Confucianism should be classified as a religion. In any event it has become the dominant force in molding Chinese culture. It has been to China what Christianity has been to Europe, Islam to Southwest Asia, and Hinduism to India.

Confucianism is primarily a moral and political philosophy. It is only secondarily and incidentally theological. Many scholars suspect that Kung Fu Tze (Confucius) was an agnostic who advocated religious rituals and observances, not because he thought that supernatural forces exist, but merely because he thought that widespread faith in their existence is essential to communal order. At the present time, however, most Confucianists believe in a Supreme Being and personal immortality.

Confucianism is pacific. On moral and political grounds Kung Fu Tze was decidedly opposed to war, terrorism, and brutality.

Confucianism is optimistic. Given certain moral and political reforms, Kung Fu Tze believed that eminently satisfactory living conditions could be established in this world. And most of his followers now anticipate and desire a continuance of their spiritual existence in a next world. Confucianists agree that life is or can be worth living.

3. *Explanation.* The comparatively stimulating climate of East Asia probably is partially responsible for the pacific optimism of its two greatest religions, Confucianism and Chinese-type Buddhism, whereas the comparatively enervating climate of Indian and Southeast Asia probably is partially responsible for the pacific pessimism of their two greatest religions, Hinduism and Indian-type Buddhism.

C. Christianity

1. *Extent.* Christianity covers Europe, the Americas, and Australasia. Its manifestations outside of Eurasia will not be discussed here. It is sufficient to note in passing that the characteristics of Middle Latitude Christianity differ from those of Tropical Christianity in the Americas in important respects.

2. *Characteristics.* Christianity is pacific and optimistic. It is opposed to aggressive war for any reason. It implies that life can be made worth living on Earth, and promises eternal life to the faithful hereafter.

3. *Explanation.* As Islam and other creeds of militant optimism have certain advantages over Christianity in Dry Areas, so do

Christianity and other creeds of pacific optimism have certain advantages over Islam in humid areas.

It has been noted that a dry environment strongly urges man to engage in aggressive warfare of a periodically recurring, if not a constant nature. Other factors being equal, contrary circumstances exist in a wet environment. Precipitation and means of sustenance are more adequate, stable, and secure. There is far less, if any, need for aggressive warfare in order to insure group survival. In a wet environment, aggressive warfare is a matter of choice, not necessity. Wet area peoples rarely attack their neighbors unless convinced of the likelihood of decisive victory without excessive casualties. The idea of recurrent or continuous warfare is repugnant to wet-area peoples. It would involve a great outflow of blood, an exceedingly uncertain inflow of treasure, and would be unnecessary to group survival.

From the viewpoint of opportunistic expediency, persistent aggression is the soundest policy in dry areas, whereas sporadic aggression is the soundest policy in wet areas. With its demand for incessant war against infidels and heretics, Islam coincides with amorally sound policy in dry areas, but obstructs it in wet areas. On the other hand, Christianity opposes amorally sound policy in dry areas, but constitutes no insurmountable obstacle to it in wet areas. An occasional adventure of profitable aggression can be organized in Christian nations provided painstaking measures are undertaken to create the illusion of defensive warfare.

It has been noted that there is probably a significant correlation between the comparatively stimulating climate of East Asia and its religions of pacific optimism. The same line of reasoning applies to Christianity in Europe.

V. Conclusion

The physical environment is one of the factors which probably influence man in his choice of religion in Eurasia. Religions of militant optimism such as Islam tend to develop in the dry areas of Eurasia; religions of pacific pessimism such as Hinduism and Indian Buddhism in its Humid Low Latitudes; and religions of pacific optimism such as Chinese Buddhism, Confucianism, and Christianity in its Humid Middle Latitudes.

VIEWING FILTERS EASE READING OF COMPLICATED MAPS

RONALD L. IVES
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Many of the more complicated modern maps, in which elevations are indicated by various shades of color, water features are shown in blue, and culture is shown in black, are quite difficult to read, because of color and contrast conflicts between the various elements, so that continued study of them is very tiring.

A considerable part of this difficulty can be eliminated by "dropping out" one of the colors by use of a viewing filter, which consists of a piece of colored glass of about the same color as the objectionable or confusing map element.

For most maps, on which hypsometry is shown in various shades of yellow, brown, or red, a red filter, such as a Wratten A (deep red), is most useful. When it is used, the hypsometric features merge with the white background, the water features, printed in blue, are darkened, and the black cultural features appear not only still black, but with increased contrast.

When it is desired to emphasize the hypsometry, a blue viewing filter should be used. This will cause an apparent darkening of features printed in red, yellow, and brown, and will lighten features printed in blue. Black printing will remain black under all conditions.

When maps are studied for many hours a day, viewing filters of very high optical quality are desirable, to prevent serious eye strain. For occasional use, not exceeding half an hour at a time, colored sun glasses, obtainable at the "dime store," will be found both suitable and inexpensive.

As a general rule, a simple filter will "drop out" its own color, lighten colors spectrally near it, and darken colors spectrally distant from it.

THE NATIONAL COUNCIL AT WORK

Thirty-fourth Annual Meeting

The National Council of Geography Teachers will hold its Thirty-fourth Annual Meeting, Friday and Saturday, November 26 and 27 in Chicago. Sessions will be held in the Palmer House where living accommodations are also available. The National Council for the Social Studies will also meet at Thanksgiving time and will hold its sessions in the same hotel. Members of both organizations are welcome to all programs. The National Council cordially invites members of all geography organizations and persons interested in geography to all program meetings except the General Assembly. Further details concerning the program for the forthcoming meeting will be announced in October.

OUTLINE OF TENTATIVE PROGRAM

Friday

9:00-12:00 A.M. General Session

This program will consist of the Greetings and Response and papers by Professors Freeman, Whitaker, Cressey and Scarfe. The first three speakers are well known in the United States. Professor Scarfe, Institute of Education, University of London will be a Visiting Professor at Syracuse University this fall. Another paper may be added to this program.

Noon Hour—State Coordinators Luncheon
2:00-4:00 P.M.

Sectional Meetings on Conservation; Color Transparencies; Field Trips; Gamma Theta Upsilon.

Evening Session 6:30 P.M.—Banquet

The address by Dr. Preston E. James is entitled: "On the Treatment of Controversial Topics in Geography."

Saturday

9:00-12:00 A.M.

General Session on "Geographic Education for World Understanding." Dr. Earl B. Shaw will be chairman of this session. Some of the papers will be given by Dr. Colby, Dr. Van Cleef, Dr. Poole, Dr. Pearcy and Dr. Nystrom.

2:00—General Assembly

EXECUTIVE BOARD

The Executive Board will have its first meeting Thursday evening, November 25. Persons interested in having the board consider some items of business should send their letters to the President before November 10th. If possible send carbon copies to Secretary Kohn.

Research in Geographic Education.

The following people have been appointed to a committee to make a survey of research in geographic education:

Dr. Henry J. Warman, Clark University, Worcester, Massachusetts, Chairman
Dr. Otis W. Freeman, U. S. Office of Education, Washington, D.C.
Dr. Fred K. Brannom, Chicago Teachers College, Chicago, Illinois
Miss Ruth Hoffman, George Peabody College for Teachers, Nashville, Tennessee

Field and Travel Experiences for Teachers.

At the Charlottesville meetings the Executive Board approved the report of the Planning Committee. This report states "That a committee of three be appointed for three years to promote field and travel experience by 1) informing the members of the N.C.G.T. of teacher exchanges, traveling fellowships and other such opportunities, and encouraging teachers especially trained in geography to apply for such appointments; 2) urging committees and other agents to consider the peculiar fitness of trained geography teachers for such exchanges and fellowships; 3) arranging hospitality when possible for geography teachers visiting in the United States and helping American geography teachers make contacts with geography teachers abroad; 4) encouraging state councils to arrange field trips for their members; 5) cooperating with the N.E.A. and other educational organizations that are promoting travel for teachers."

Miss Pauline P. Schwartz, Professor of Social Science, New Haven State Teachers College, New Haven, Connecticut, has accepted the responsibility of heading this committee. Other members of the committee will be announced soon.

Academy of Political Science.

Dr. Adelbert K. Botts, State Teachers College, Trenton, New York, was our official delegate to the meeting of the American Academy of Political and Social Sciences held in Philadelphia in April.

Professional Paper No. 8.

Professional Paper No. 8 is now available. It consists of five papers on geography curricula that were published in the April issue of the Journal. Four of the papers were prepared for the Annual Meeting held in Charlottesville, Virginia, last December. This Professional Paper represents part of the plan recommended by last year's president, Alfred H. Meyer, to promote and publicize curricular studies in geography. Publication of another paper on professional training in geography is under consideration. Copies of Professional Paper No. 8 may be secured from Professor Clyde Kohn, Department of Geography, Northwestern University, Evanston, Illinois, for fifty cents each.

Thomas F. Barton, *President*
National Council of
Geography Teachers

EDITORIAL NOTES AND NEWS

The Fiftieth Anniversary of The Geographic Society of Chicago was celebrated by a dinner in the Grand Ballroom of the Stevens Hotel on February 21. Nine hundred members and guests of the Society participated.

There were presented:

Three *Citations* in recognition of distinguished service in editing geographical journals for a total of nearly eighty-five years, to George J. Miller, Editor of The Journal of Geography, official organ of the National Council of Geography Teachers; to Miss Gladys M. Wrigley, Editor of *The Geographical Review*, official organ of the American Geographical Society of New York; and to W. Elmer Ekblaw, Managing Editor and Editor of *Economic Geography* published by Clark University.

Three *Merit Awards* in cash in recognition of eminent achievement in geographic writing, to Glenn T. Trewartha for his volume, *Japan, a Physical, Cultural, and Regional Geography;* to Stephen B. Jones for his volume, *Boundary Making, a Handbook for Statesmen, Treaty Editors, and Boundary Commissioners;* and to Malcolm J. Proudfoot for his volume, *Measurement of Geographic Area.*

The *Geographic Society of Chicago Gold Medals* to Miss Zonia Baber in tribute to the founder who initiated the organization of the Society; to Burton E. Holmes, the distinguished dean of the illustrated geography lecture platform; and to John T. McCutcheon, eminent reporter, author and world traveler for broadening the geographic horizons of the American public.

Four *Helen Culver Gold Medals* to Wallace W. Atwood, Sr., for distinguished research in Physical Geography, and as a founder of the Society; to Charles C. Colby, for distinguished leadership on the frontiers of geographic thought; to Vernor C. Finch, for distinguished contributions in Economic Geography, and to Derwent S. Whittlesey, for distinguished achievement in Political Geography.

The Helen Culver Gold Medal or The Geographic Society of Chicago Gold Medal was awarded in earlier years to William Morris Davis, Rollin D. Salisbury, J. Paul Goode, and Ellen Churchill Semple.

GEOGRAPHICAL PUBLICATIONS

Mineral Resources of the United States. Staffs of the Bureau of Mines and Geological Survey. 212 pp. Public Affairs Press, 2153 Florida Avenue, Washington 8, D.C.

The data for *Mineral Resources of the United States* were compiled by members of the staff of the United States Geological Survey and the Bureau of Mines. Many of the data, including many of the maps and grafs, were presented as testimony in hearings of the Subcommittee of the Committee on Public Lands of the United States Senate. Such material, however, has not been available to the public. In the light of tremendous demands upon our resources for consumption in our own country as well as thruout the world, this volume becomes significant. It is undoubtedly the most authoritative report yet published. Probably nothing to equal it has appeared since the numerous volumes dealing with the conservation of our resources, published many years ago. The authors have endeavored to put into understandable form the accumulated mass of scientific data and the necessary abundance of scientific calculations. This attempt appears to the reviewer to have been very successful. For example, Figure 2, indicates in a concise form reserves in terms of production and reserves in years of consumption. Figure 4, presents in a concise tabular form our relative self-sufficiency in minerals. It shows those in which we are virtually self-sufficient and those for which we are dependent on foreign sources. The volume is broken down into 49 chapters with separate chapters for each of 39 different minerals. This makes the material very definite and gives it a high degree of usefulness. Maps, grafs, and statistical tables help to clarify the discussion. It appears to the writer that this volume will be indispensable to every secondary and college teacher in the country.

B. H. Schockel. **Manufactural Evansville.** 273 pp., The Author, Aurora, Ind. 1947, $2.50.

This volume is an exhaustive study of the development of manufacturing, 1820-1933, in the largest city of southern Indiana. Considered are the local setting, the influences of the Ohio River and the surrounding area, and its position in the nation. The evolution considers the chief periods and influences. Another chapter discusses the chief manufacturing plants, especially their alignment and growth. The final chapter discusses the manufactural trade pattern, both for purchases and sales, and the evolution of the trade pattern. In the appendices are many tables supplementary to the 52 in the text, and notes on the 38 illustrations.

Dr. Schockel's volume represents much careful work and is of value not only to persons interested in Evansville but to nearly everyone much interested in urban geography, because it presents well various topics not generally considered, and possesses considerable suggestiveness for persons interested in studying other cities.

STEPHEN S. VISHER

Indiana University

Gertrude Whipple and Preston E. James. **Our Earth,** and **Using Our Earth.** Illustrated. Macmillan Company, New York 11, N.Y. 1947. $1.88 and $2.20.

These two books are called basal geographies. The first, *Our Earth,* is written for use in the third grade. It contains 245 pages about half of which are used for colored maps and full and half page kodacrome pictures. The second book, *Using Our Earth,*

designed for fourth grade use has 295 pages and is very similar in make-up to the first. Both books are printed on good quality paper in clear type of suitable size for small children. The bindings are durable and of convenient size for use by small children. The purpose, that of presenting clear concepts that are basic to geography readiness, is a worthy one. This purpose is accomplished for the most part. The pictures aid greatly in making clear the concepts.

These little books are attractive, and are also conveniently useful. They contain lists of "Questions and Things to Do" as well as helps for using the index. One regrets, however, that the textual material, especially that in *Our Earth,* has not been more carefully edited. It seems, that, in an attempt to get down to the child level, there has been a bending backward in order to end numerous sentences with prepositions, which in some instances has made the sentence more cumbersome and less clear. On page 40 a different order of sentences would contribute to clarity. And again on page 134, the text does not really make clear what an island is. Page 150, near the bottom, states that the inner part of the tree "makes a thick soup called wood pulp." Page 168, gives the idea that a little water animal has leaves, quote "Each leaf waves in the water to catch food."

I fear that residents of the Corn Belt would not appraise highly the portion of the book which shows corn being cut by hand, page 92. Page 87, says "One horse can pull the plow as he walks between the rows." Page 86, says "John walks on one side of" the wagon and his father on the other, while they "snap off the dry ears of corn."

An example from *Using Our Earth,* page 49, "But other young males, called steers, would not become fathers of calves and were therefore sold for meat." This would no doubt raise a question which most teachers could not answer and furthermore is this the reason why they (steers) are sold for beef?

It is hoped that the teachers who use these books will have enough knowledge of science, agriculture, and nature to prevent children gaining incorrect ideas while they are gaining many correct concepts.

Anna C. Larson

State Teachers College, St. Cloud, Minnesota

John K. Wright and Elizabeth T. Platt. **Aids to Geographical Research.** 343 pp. American Geographical Society Research Series No. 22. Columbia University Press, N.Y. 1947. $4.50

This volume by the Director of the Amerikan Geographical Society and its Librarian for many years, is a completely revised edition of one by Dr. Wright published in 1923. It consists largely of conveniently classified bibliographies, lists of periodicals, atlases, gazetteers and other reference books. It is designed particularly to serve advanced students and professional workers in geography. A 38 page introduction presents a stimulating summary of the nature of geographical studies and some aids thereto; about 50 pages presents conveniently arranged bibliographies of general reference works and bibliographies. Then comes 35 pages of topical aids and 135 pages of regional aids. An appendix of 20 pages presents a classified index of about 200 American geographers as of about 1940 with statements of the special interests of each.

This handy volume is filled with material helpful to workers in advanced geography.

Stephen S. Visher

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